# Key to articles

# Authors

ALÉN, R. See VIRTAPOHJA, J. ALLISON, B.J. & ISAKSSON, A.J. Comparison of mid-ranging controllers. (T25) 1:61. ALTOSAAR, E. & LANG, D. Multi-ply coated board machine optimized for final product

ANDTBACKA, S. The importance of washing in oxygen delignification and TCF bleach-

ARMSTRONG, J.R. See TOMNEY, T. ASTROM, A. Quality aspects of 100% deinked newsprint furnish. (T357) 10:53.

AXEGARD, P. & RENBERG, L. The minimal impact bleached kraft pulp mill. (T134) 4:81.

BACHUS, H. See JASCHINSKI, T.

AYTON, J., See REID, D.W.

BAILEY, J. Conferences, courses and seminars can keep your skills up to par. 1:86. BAILEY, J. Alkaline pulpers partner chemicals and cooking. 3:32.

BAILEY, I. The heat is on, 6:17.

BAILEY, J. Upgrading and expanding production is still industry focus. 6:21.

BAILEY, J. Biotechnology supports the industry's effort for better processes. 10:9.
BAILEY, J. Mills still have a long wish list of testing equipment needs. 10:22.
BAILEY, J. See RODDEN, G.

BARBE, M.C. See LÉVESQUE, M. BARBE, M.C. See TSE, D.

BARNET, A.J. 23rd Annual Leask Survey: The mechanical pulping market has matured. 2:12. BERGMAN, T., On-line chip size analysis - new technology for an improved pulping process. (T453) 12:150.

BETHUNE, J.H. What price education? 12:33.

BICHO, P.A., See WATSON, P.A.

BINKLEY, C.S. & FORGACS, O.L. Status of forest sector research and development in Canada, (T10) 1:39.

BLACKWELL, B. & LINCOLN, D. A sodium/sulphur/chlorine balance demonstrated low liquor losses at a kraft mill. (T34) 1:74.

BLEY, L. Latest experiences of on-line charge measurement: a process control concept.

BOISVERT, B. See NOEL, G.

BOUGH, D. See STOUT, J. BOURGOIN, D. See OWEN, M.

BRAATEN, A., Film applicators - the past, the present, the future. (T345) 10:48. BROGYANYI, E. See ROSKER, M.

BRUCE, D., HULKKONEN, S. Steam drying: benefits, technology and a survey of applications. (T420) 12:115. BRUN, J. See CARRÉ, B.

BYRES, E.J. What superintendents and engineers need to know about fibre optics. (T270) 8:62.

CARABIN, P. See LÉVESQUE, M.

CARRÉ, B., BRUN, J. & GALLAND, G. The incidence of the destabilization of the pulp

suspension on the deposition of secondary stickies. (T248) 7:75.

CARRÉ, B., VERNAC, Y. & GALLAND, G. Comparison between low-speed kneader and high-speed disperser: effect of temperature, energy consumption and chemistry on optical properties. (T310) 9:46. CHARRON, M. See SISLER, G.

CHINN, G.P. See MARDON, J

CLOUTIER, J.-N. See DAVY, M.F. CORREIA, F., ROY, D.N. & GOEL, K. Pulping of Canadian industrial hemp (Cannabis sativa L.). (303) 9:39.

CORSON, S.R. See WAKELIN, R.F.

COURT, G. See NI, Y. CRONIN, D.C. See WOOD, J.R.

DALLAIRE, D. See VILLENEUVE, F.

ation systems model creates new challenges, 12:25, DAHLQVIST, G. See KURE, K-A.

DANBY, R. Understanding your customers' customers' requirements. 9:13. DANEAULT, C. See SAIN, M.M.

DAVY, M.F., ULOTH, V.C. & CLOUTIER, J.-N. Economic evaluation of black liquor ses for incremental kraft pulp production. (T51) 2:35.

DENSON, W. See WISEMAN, M. DENTON, R. See SEDGWICK, G.

DESSUREAULT, S. See LÉVESQUE, M.

DESSEREAULT, S. See TSE, D. DOCKTER, S.D. See KNOWLES

DODSON, C.T.J. See FARNOOD, R.R.

DOUGLAS, M.A. Field trials and emissions testing of paper deinking solids (PDS).

DU, H. & DUMONT, G.A. Constrained multivariable control of a wood chip refiner. (T257) 8:47, DUFF, S.J.B. See ZERBE, P.M.

DUFRESNE, R., LAVALLÉE, H.-C., LEBRUN, R.E. & LO, S.-N. Étude comparative de l'opération d'un système de bioréacteur à membranes et d'un système de boues ées conventionnel pour le traitement des effluents papetiers. (T66) 2:51.

DUMONT GA See DU H

EDELMANN R See KIISKINEN H

ELIOT, S. Fighting water-induced bearing failure. 7:29.

ERKKILÄ, A.-L., PAKARINEN, P. & ODELL, M. Sheet forming studies using layered orientation analysis. (T39) 1:81.

ESCABASSE, J.Y., VERNAC, Y., LENON, G., GALLAND, G. & SUTY, H. Microbiological decontamination of recycled papers and boards. (T412) 12:106.

FARNOOD, R.R., LOEWEN, S.R. & DODSON, C.T.J. Machine direction profiles of stock speed and table activity. (T130) 4:71,

FERGUSON, M. See STRATTON, S.C.

FERNANDEZ, E.O., HODGSON, K.T., Colloidal stability of flexographic newsprint deinking dispersi

FERRY, P. See Wood, J.R. FISCHER, K. See GLIESE, V.

FLETCHER, R.S., HORNG, A.J. & SASAKI, K.R. Enhancing deinked pulp quality through low consistency refining. (T44) 2:26,

FORGACS, O.L. See BINKLEY, C.S.

FORGACS, O.L. Jasper Mardon led the way in paper machine analysis and troubleshoot-

FOULGER, M. See PARISIAN, J. FOURNIER, V.G. See VILLENEUVE, F. FOX, J. See ASTROM, A. FOX, J. See PROCTER, D.

FRANCIS, D.W., WEARING, J.T., RESIDE, D.A. Engineering assessmen sure options for an older integrated newsprint mill. (T437) 12:134.

FRIEDRICH, F.D. See DOUGLAS, M.A.
FRIGON, D. & LO, A. Evaluation of ammonium polyphosphate and waste-activated stract as a nutrient source for activated sludge system. (T294) 9:29. FUHR, B.J., HENRY, D., LEARY, G. & SMITH, G. Seasonal variations at a mechanical newsprint mill. (T61. 2L45.

GAGNÉ , A. See RAYMOND, L.

GALLAND, G. See CARRÉ, B. GALLAND, G. See ESCABASSE, J.Y.

GAUTHIER, C. See VINES, S.M.

GEHR, V. SCHARZ, M., HEISE, O. Water loop and bleaching process design to recycle recovered paper into printing and writing. (T444) 12:141.
GILBERT, A.F. See NATARAJAN, K.

GLIESE, T., KLEEMANN, S., FISCHER, K. Investigations on mechanism and on kinetics of xylanase prebleaching. (T474) 12:171.

GOEL, K. See CORREIA, F.

GORINEVSKY, D. See HEAVEN, M.

GRANDFELDT, T., See LUNABBA, P.

GRATTON, R. See RAYMOND, L. GRATTON, R. See VINES, S.M.

GREENBAUM, P.J. Shedding some light on women in the industry. 1:17. GREENBAUM, P.J. The industry's holy grail: the search for fibre. 3:30

GREENBAUM, P.J. The Millennium Bug. 9:24.

GRONDIN, G. See SAIN, M.M. GROSHEK, J., See BRAATEN, A

GRUNDSTROM, P. See LUNABBA, P.

HARALA, E. See McCAIG, R.G. HEAVEN, M., GORINEVSKY, D., KEAN, M. & SUNG, C. Integrated tool for intelligent identification of CD proce ignment, shrinkage and dynamics. (T56) 2:40.

HEAVEN, E.M. See ZAKAIB, S.M.

HEISE, O. See GEHR, V.

HEITNER, C. See WONG, D.F. HENRY, D. See FUHR, B.J.

HESSEN, J. Electricity deregulation - managing new reality: a western perspective. (T433) 12:130.

HILDEN, K.K. & VALKONEN, M. Continuous paper machine monitoring - the key to HILDEN, K.K. & MUSTONEN, I. Complete shear rate analysis provides a new means of

optimizing coating performance on high speed coaters. (T266) 8:57.

# ANNUAL INDEX

HILDEN, K.K. See PELTONIEMI, H. HODGSON, K.T. See FERNANDEZ, E.O. HORNG, A.J. See FLETCHER, R.S. HUHTELIN, T.J. See LAURIKKALA, M.S. HULKKONEN; S. See BRUCE, D. HURLEY R. See TOMNEY T

ISAKSSON, A.J. See ALLISON, B.J. ISHAK, N. Ideal sludge management method hard to pinpoint. 3:30.

JASCHINSKI, T., ODERMATT, J., PATT, R., BACHUS, H. & KORDSACHIA, O. Use of high temperature resis JIANG, Q See NI, Y. nt chelants in peroxide bleaching of kraft pulps. (T261) 8:52.

KAPPEL, J. See ROSKER, M. KARIOIO, I. See LUTHE, C. KEAN, M. See HEAVEN, M.

KIRKPATRICK, I. & REED, C. Time to rebuild with paper chemistry? 1:12

KLEEMANN, S. See GLIESE, T.

KNOWLES, NEVRUZ, A.A., DOCKTER, S.D. Software based system proves improved leak detection capability for recovery boilers. (T463) 12:160. KOIVO, H.N. See LAURIKKALA, M.S.

KORDSACHIA, O. See JASCHINSKI, T. KRONIS, J.D. See SUSS, H.U.

KURE, K-A. & DAHLQVIST, G. Development of structural fibre properties in high intensity refining. (T233) 7:59 KWOK, K.E. See LI, LS.

LAMPERT, A. Deregulation will help the industry, 3:30

LANG, D. See ALTOSAAR, E.

LANG. L., POIRIER, N.A. Evaluation of high velocity impingement hoods applied to conventional drying cylinders. (T416) 12:110.

LANOUETTE, R., THIBAULT, J. & VALADE, J.L. Improvement of modeling D-Optimal design data with neural networks. (T298) 9:34.

See LUNABBA, P

LAURIKKALA, M.S., VUOTI, M.T., HUHTELIN, T.J. & KOIVO, H.N. Paper quality controls by utilizing new consistency measurement capabilities. (T224) 7:50. LAVALLÉE, R.E. See DUFRESNE, R.

LAVKULICH, L.M. See ZERBE, P.M.

LEARY, G. See FUHR, B.J.

LEBRUN, R.E. See DUFRESNE, R. LEHTINEN, J. See RETULAINEN, E.

ENON, G. See ESCABASSE, JA

LÉVESQUE, M., DESSUREAULT, S., CARABIN, P. & BARBE, M.C. Measurement of deinked pulp quality and deinking efficiency. Part E Impact of specimen prepara-tion procedures on ISO brightness results. (T141) 5:27.

Part II: Impact of specimen preparation procedures on ink content results. (T211) 6:79.
LI, L.S., KWOK, K.E., ZURCHER, U.J. Development of an expert monitoring and advisory system for preventing pulp sheet breaks. (T378) 11:35.
LI, Z. See NI, V.

LINCOLN, D. See BLACKWELL, B.

LISTER, S. See URBANSKI, R.

LO, A. See FRIGON, D.

LO, S.-N. See DUFRESNE, R. LOEWEN, S.R. See FARNOOD, R.R.

LUNABBA, P. Top quality deinked pulp from mixed office waste by high temperature peroxide bleaching. (T333) 10:36. LUTHE, C., ULOTH, V., KARIDIO, I., PRESCOTT, B., WEARING, J., STRANG, A. Sul-

o control dioxins formation in salt-laden power boilers. (T391) 11:48, LUTHE, C., ULOTH, V., KARIDIO, I. Characterizing polycyclic aromatic hydrocarbo

emissions from hog fuel boilers. (T423) 12:118. LYKA, W. See SEDGWICK, G.

M

MAKELA, K. See SALMENOJA, K.

MALASHENKO, A. See NYBERG, P. MARCIL, L. Eleven mills record no lost time injuries. 4:47.

MARDON, J., CHINN, G.P., O'BLENES, G., ROBERTSON, G. & TKACZ, A. Evaluating paper machine operation -1. Equipment and operation - (a) Principles. (T149) 5:35. (b) Lost Efficiency Analysis. (T157) 5:43. (c) Key information. (T161) 5:47. MARTIN-McGINTY, S. See SISLER, G.

McCAIG, R.G. & HARALA, E. Manufacture of No. 5 lightweight coated using on-line film press coating and soft nip calendering - Experience from MacMillan Bloedel PM5.

McCANN, D. Design review of demineralized water plants for industrial power generation. (T176) 6:37.

McCANN, D. Design review of electrostatic precipitators for biomass power boilers. (T306) 9:42.

McCUBBIN, N. Who needs E-mail? 1:90.
McCUBBIN, N. Plan your trip using a CD-ROM, 2:61.
McCUBBIN, N. Some tips for the web. 3:67.
McCUBBIN, N. Brazilian mills have a lot to offer. 4:76.

McCUBBIN, N. Keeping track may depend on your outlook. N. McCubbin. 5:63.

McCUBBIN, N. Microsoft: the good and the annoying. 6:87. McCUBBIN, N. For couriers, the internet delivers. 7:86.

McCUBBIN, N. CAD for Windows, 8:87. McCUBBIN, N. 15 years in desktop publishing, 9:62.

McCUBBIN, N. Inoculate your computer. 10:73.
McCUBBIN, N. Which word processing package? 11:63.
McCUBBIN, N. Did the quite brown fox really jump over Toledo? 12:175

McDONALD, J.D. See WOOD, J.R.

McNEIL, K. New technology brings new risks. 3:30 MERISALO, N. See RETULAINEN, E.

MILI, D. How shareholder value is reshaping the industry, 6:14. MOHR, P. Commodity prices caught in Asian downdraft, 2:8.

MOHR, P. Competitive challenges in market pulp. 4:10, MOHR, P. Paper industry re-positions for the new millens

MOHR, P. Commodities, currencies and deflation - U.S. dollar strength restrains com-

modity prices. 10:8.

MOHR, P. Challenging market pulp conditions sets stage for more industry consolidation. 12:10 MOONEY, B. See OWEN, M.

MORTAZAVI, R. See DOUGLAS, M.A.

MULLEN, T., See REID, D.W. MUSTONEN, I. See HILDEN, K.K.

NATARAJAN, K., GILBERT, A.F. & YOUSEF, A. PID controller tuning based on finite ency response data. (T118) 4:59.

NEVRUZ, A.A. See KNOWLES.

NI, Y. See ZHANG, X

NI, Y., LI, Z., JIANG, Q., COURT, G. & BURTT, M. Improved transition metal removal in a reducing agent-assisted chela NICOLLE, F. See OWEN, M. NIMMERFROH, N.F. See SUSS, H.U. sisted chelation stage: a laboratory study. (T285) 8:77.

NIVELON, S., PICHON, M., PIOLLET, A. Deconcentration treatment for corrugating

medium papermaking circuits target zero reject. (T371) 11:28.

NOEL, G., BOISVERT, G. Project energy efficiency using Pinch analysis. (T409) 12:103. NYBERG, P. & MALASHENKO, A. SymFlo D: the newest dilution control headbox on the market. (T5) 1:32.

0

O'BLENES, G. See MARDON, J.

O'CONNOR, B., VOSS, R. Progress in reducing effluent acute lethal toxicity; A 1996 survey. (T471) 12:168.

ODELL, M. See ERKKILÄ, A.-I

ODERMATT, J. See JASCHINSKI, T. OUELLET, J. Using nature to control toxicity. 3:30.

OUELLET, J. Estivale discusses crucial industry issues. 7:12.

OWEN, M., NICOLLE, F., MOONEY, B. & BOURGOIN, D. Implementation and benefits of environmental awareness training. (T106) 4:43.

PÄKARÍNEN, P. See ERKKILÄ, A.-L.
PANDE, H., ROY, D.N. Influence of fibre morphology and chemical composition on the papermaking potential of kenaf fibres. (T374) 11:31.

PARISIAN, J. & FOULGER, M. PATT, R. See JASCHINSKI, T.

PAULAPURO, H. See RETULAINEN, E.

PEKAROVIC, I. See VENDITTI, R.A.

PELTONIEMI, H., HILDEN, K.K. Non-contacting infrared drying - choice of technology.

(T466) 12:163. PETSCHAUER, F. See ROSKER, M.

PICCIONE, J. Look for balance in chemical commodity markets in 1998. 1:21.

PICHON, M. See NIVELON, S.
PIIPPONEN, J. Nonideal valves in control: tuning of loops and selection of valves. (T361) 10:64.
PIOLLET, A., See NIVELON, S.
POIRIER, N.A. See LANG, L.

PRESCOTT, B. See LUTHE, C.

PROCTER, D, FOX, J. High speed newsprint from 100% recycled at PM14, Aylesford. (T404) 12:98

PRUSZYNSKI, P.E. See TOMNEY, T.

PUURUNEN, A. Effect of Water Jet conditioning on low freeness pulp at the Rauma paper mill. (T180) 6:42.

RAOUL, D. See URBANSKI, R.

RAYMOND, L., CAGNÉ, A., TALBOT, J. & GRATTON, R. Pitch deposition in a fine paper mill. (T71) 2:56.
RAYMOND, L. See VINES, S.M.

RAZBIN, V. See DOUGLAS, M.A. REED, C. See KIRKPATRICK, I.

REID, LD. Solid residues generation and management at Canadian pulp and paper mills in 1994 and 1995. (T109) 4:49.
REID, D.W., AYTON, J., MULLEN, T. CPPA oxygen delignification survey. (T387) 11:43.

RENBERG, L. See AXEGARD, P. RESIDE, D.A. See FRANCIS, D.W.

RETULAINEN, E., MERISALO, N., LEHTINEN, J. & PAULAPURO, H. Effect of Condebelt press drying on sheet structure and properties. (T20) 1:53. RICKS, M.R. High density fast-response (HDF) gas infrared drying: a new level of drying

erformance. (T197) 6:64.

RIEBEL, P. Environmental labelling and profiling. 1:92. RIEBEL, P. Mill-wide environmental awareness training. 3:65.

RIEBEL, P. Alberta Pacific's environmental program leaves nothing to chance. 4:28. RIEBEL, P. Nutrients in mill effluents: An update. 5:9.

RIEBEL, P. Water quality-based regulations are on the way. 7:85.RIEBEL, P. Working with environmental consultants. 9:64.

RIEBEL, P. Environmental performance and shareholder value. 11:61.

ROBERTSON, G. See MARDON, J.

RODDEN, G. Papermakers should not neglect the dryer section 2:12.

RODDEN, G. Avenor Thunder Bay is Canada's newest millionaire. 2:18. RODDEN, G. Metamorphosis: How Donohue Thorold switched to an 80% recycled furnish. 3:8. RODDEN, G. PaperWeek overcomes the obstacles. 3:17

RODDEN, G. Coating can prevent overdrying edges. 3:30.

RODDEN, G. How to use effluent while bleaching, 3:30.

RODDEN, G. Closure and corrosion don't need to be partners. 5:17.

RODDEN, G. University of Toronto students have learned their lessons well. 6:11.

RODDEN, G. PacWest delegates get the straight talk from industry leaders. 7:17.

RODDEN, G. Narrowing the focus helps mills provide a safer work environment. 8:11,

RODDEN, G. SCA+ opens a window of opportunity for Stora Port Hawkesbury. 8:16. RODDEN, G. Dial M for MagniPress. 8:44.

RODDEN, G. Bowater president to address Midwest Branch annual meeting in September. 8:80.

RODDEN, G. Post refiners give Bowater Mersey an energy edge. 9:9.

RODDEN, G. Doing their homework well pays off for Alliance Forest Products' founders. 10:16. RODDEN, G. PM 5 puts Dolbeau in an "eminent" position. 10:20.

RODDEN, G. PaperWeek changes with the times. 11:8.

RODDEN, G. Pope and Talbot wants to be a market pulp leader. 11:9. RODDEN, G. Harmac Pacific gets 'cracking'. 11:12. RODDEN, G. Suppliers must remain responsive to mills' changing needs. 11:17.

RODDEN, G., BAILEY, J. Don't let corrosion eat away your profits. 12:12.
ROSKER, M. PETSCHAUER, F., BROGYANYI, E. & KAPPEL, J. The main concept for

pulp sheet formers based on the twin-wire press principle. (T126) 4:67.
ROY, D.N. See CORREIA, F.

ROY, D.N. See PANDE, H RUSSELL, W. See SYBERG, O.

# SABOURIN, M.J. See XU, E.C.

SAIN, M.M., DANEAULT, C. & GRONDIN, G. The modified zeolite in waste paper recycling. (T238) 7:64

SALMENOJA, K., MAKELA, K. Studies on the corrosion of Fe-based alloys for superheater applications. (T430) 12:126. SASAKI, K.R. See FLETCHER, R.S.

SCHARZ, M. See GEHR, V.

SCHMDT, J., See WORG, D.F. SEDGWICK, G., WHITE, J., WOOLLEY, J., WOJCIK, P., STEINBACK, B., LYKA, W. & DEN-TON, R. Control of biological effluent treatment for mechanical pulp mills. (T29) 1:69. SHAW, R. Reduction of chlorine dioxide emissions from a Mathieson generator. (T89) 3:52, SHORT, W.D. ITT Flygt agitators help Abitibi-Consolidated's Beaupré, mill meet efflu-

lations. (T97) 3:61.

SHORT, C.B. See WOOD, J.R. SIMARD, R. Raffinage à basse consistance de la pâte thermomécanique. (T85) 3:48.

SISLER, G. MARTIN-McGINTY, S., CHARRON, M. Managing paper test data for quality control. (T367) 11:24.

SMITH, G. See FUHR, B.J.

SMITH, P. See BRAATEN, A

STEINBACK, B. See SEDGWICK, G.

STOUT, J. & BOGH, D. Refiner autotransformer motor start. (T188) 6:54.

STRANG, A., See LUTHE, C. STRATTON, S.C. & FERGUSON, M. Progress report on the BFR TB technology demon-

stration: December 1996. (T82) 3:45. STUMBORG, M.A. See WATSON, P.A.

SUTY, H. See ESCABASSE, J.Y.

SUNG, C. See HEAVEN, M.

SUSS, H.U., NIMMERFROH, N.F. & KRONIS, J.D. The naked truth on hot peroxide aching. (T122) 4:63

SWANEY, J. See SYBERG, O.

SYBERG, O., SWANEY, J., VICE, K. & RUSSELL, W. Water reduction strategies for existing bleach plants. (T253) 7:80.

TALBOT, J. See RAYMOND, L. TALJA, R. Pressing and drying developments. (T113) 4:54.

THIBAULT, J. See LANOUETTE, R TIMOFEEV, O., See KHSKINEN, H.

TKACZ, A. See MARDON, J

TOMNEY, T., PRUSZYNSKI, ARMSTRONG, J.R. & HURLEY, R. Controlling filler retention in mechanical grades. (T274) 8:66. TOWERS, M. & TURNER, P.A. Survey of bleach plant washing practices in Canadian

mills, (T218) 7:44. TSE, D. Recycled pulp washing, Part II: optimum washing sub-selection for a single-loop

ONP/OMG deinking plant. (T337) 10:40. TURNER, P.A. See TOWERS, M.

# U

ULOTH, V.C. See DAVY, M.F.

ULOTH, V., See LUTHE, C.

URBANSKI, R., LISTER, S. & RAOUL, D. Development of an effective TRS and odor reduction program. (T278) 8:70.

VALADE, J.L. See LANOUETTE, R.

VALADE, J.L. The potential use of larch in the Canadian pulp and paper industry: A review. (T459) 12:156.

VALKONEN, M. See HILDEN, K.K. van HEININGEN, A.R.P. See ZHANG, X.

VARNELL, D.F. Paper properties that influence ink-jet printing. (T101) 4:37.

VENDITTI, R.A. & PEKAROVIC, J. Aspects of the agglomeration process to remove contaminants in wastepaper. (T319) 9:56.

VERNAC, Y. See CARRÉ, B. VERNAC, Y. See ESCABASSE, J.Y.

VICE, K. See SYBERG, O.

VICE, K. The EPA Cluster Rule: What are the implications for Canadian mills? (T455) 12:152. VILLENEUVE, F., DALLAIRE, D. & FOURNIER, V.G. Site location and open communi-

cations are the keys to a successful landfill permitting. (T47) 2:29.
VINES, S.M., GRATTÓN, R., RAYMOND, L. & GAUTHIER, C. Control of foaming at the

VIRTAPOHJA, J., Determining of chelating agents (EDTA and DTPA) in bleach liquors. (T330) 10:33 VIRTAPOHJA, J., ALÉN, R. Accelerated degradation of EDTA in an activated sludge

plant. (T396) 11:53. VOSS, R. See O'CONNOR, B.

VUOTE M.T. See LAURIEKALA M.S.

VYSE, R. See ZAKAIB, S.M.

WAKELIN, R.F. & CORSON, S.R. Reject thickening behavior of TMP screening. (T1) 1:27.

WALTER, J.C. One filter for continuous and clean wet end liquids. (T228) 7:54. WATSON, P.A., BICHO, P.A., STUMBORG, M.A. Wheat straw: available source for

Canada<sup>2</sup> (T449) 12:146. WAYMAN, M. Howard Rapson pioneered chlorine dioxide bleaching. 4:22.

WAYMAN, M. HOWARD RAPPON PROJECTED CHRONIC GROWING, T. See LUTHE, C.
WEARING, J.T. See FRANCIS, D.W.
WELCHER, G.M. Improved newsprint operation with a Bel Baie IV. (T193) 6:60.

WHITE, J. See SEDGWICK, G.

WILLIAMSON, P.N. Granite roll substitutes popular, survey shows. 3:30

WILLIAMSON, P.N. Secret to high-quality paper starts with fibre. 3:30.
WILLIAMSON, M. "Whole room" control puts a new high-tech face on A-C's groundwood operations, 4:13,

WISEMAN, M. & DENSON, W. System monitors reliability. 7:32.

WOJCIK, P. See SEDGWICK, G. WONG, D.F., HEITNER, C., SCHMIDT, J. A preliminary evaluation of the use of treated mill effluent in hydrosulphite and peroxide bleaching of TMP. (T400) 11:57. WOOD, J.R., McDONALD, J.D., FERRY, P., SHORT, C.B., CRONIN, D.C. The effect of

machine forming and pressing on offset linting. (T350) 10:53. WOOLLEY, J. See SEDGWICK, G.

XU, E.C. & SABOURIN, M.J. Brightness and bleachability of thermomechanical pulp. (T75) 3:38.

YOUSEF, See NATARAJAN, K.

ZAKAIB, S.M., HEAVEN, E.M. & VYSE, R. Paper quality improvements on conventional

calenders by hot calendering with tandem Calcoils. (T170) 5:57.

ZERBE, P.M., DUFF, S.J.B. & LAVKULICH, L.M. Environmental management system Canada's pulp and paper industry: A survey and analysis of current practice. (T206) 6:74.
ZHANG, X., NI, Y. & VAN HEININGEN, A.R.P. Basic engineering design data for ozone/solvent bleaching of ALCELL R-derived pulp. (T14) 1:44.

ZURCHER, U.J., See LI, LS.

# By Title or Subject

15 Years in desktop publishing, N. McCubbin, 9:62. 23rd Annual Leask Survey: The mechanical pulping market has matured, A.J. Barnet, 3:12,

ACCELERATED degradation of EDTA in an activated sludge plant. J. Virtapolija et al.

ADAPTIVE SYSTEMS. Constrained multivariable control of a wood chip refiner. H. Du

ADDITIVES. Colloidal stability of flexographic newsprint deinking dispersions. E.O. Fernandez et al. (T383) 11:39, ALBERTA PACIFIC's environmental program leaves nothing to chance. P. Riebel. 4:28.

ALKALINE pulpers partner chemicals and cooking, J. Bailey, 3:32. ALLIANCE FOREST PRODUCTS. Doing their homework well pays off for Alliance For-

est Products' founders, G. Rodden. 10:16. ANALYSIS. Project design in energy efficiency using Pinch analysis. G. Noël et al. (T409) 12:103.

ASPECTS of the agglomeration process to remove contaminants in wastepaper. R.A. Venditti et al. (T319) 9:56.

AVENOR Thunder Bay is Canada's newest millionaire. G. Rodden. 2:18.

BASIC ENGINEERING design data for ozone/solvent bleaching of ALCELL R-derived pulp. X. Zhang et al. (T14) 1:44.

BIOBLEACHING. Investigations on mechanism and on kinetics of xylanase prebleaching. T. Gliese et al. (1474) 12:171).
BIODEGREDATION. Accelerated degradation of EDTA in an activated sludge plant.

apohja et al. (T396) 11:53.

BIOTECHNOLOGY supports the industry's effort for better processes. J. Bailey. 10:9. BLACK LIQUORS. A sodium/sulphur/chlorine balance demonstrated low liquor losses at a kraft mill. B. Blackwell et al. (T34) 1:74.

BLEACH PLANTS. The minimal impact bleached kraft pulp mill. P. Axegard et al. (T134) 4:81

BLEACHING. Basic engineering design data for ozone/solvent bleaching of ALCELL R-derived pulp. X. Zhang et al. (T14) 1:44. BLEACHING, Determinati on of chelating agents (EDTA and DTPA) in bleach liquors. J.

Virtapohja. (T330) 10:33. BLEACHING. Top quality deinked pulp from mixed office waste by high temperature

peroxide bleaching, P. Lunabba et al. (T333) 10:36.

BLEACHING. Water loop and bleaching process design to recycle recovered paper into printing and writing. V. Gehr et al. (T444) 12:141.

BOILERS. Design review of electrostatic precipitators for biomass power boilers. D. McCann. (T306) 9:42.

BOTTOM LINE: Commodity prices caught in Asian downdraft. P. Mohr. 2:8. Competitive challenges in market pulp. P. Mohr. 4:5. Paper industry re-positions for the new

# ANNUAL INDEX

millennium, P. Mohr, 8:8. Commodities, currencies and deflation - U.S. dollar strength restrains commodity prices. P. Mohr. 10:8. Challenging market pulp condi-

tions sets stage for more industry consolidation. P. Mohr. 12:10.

BOWATER president to address Midwest Branch annual meeting in September. G. Rod-

BRAZILIAN MILLS have a lot to offer, N. McCubbin, 4:76.

BRIGHTNESS and bleachability of thermomechanical pulp. E.C. Xu et al. (T75) 3:38. Top quality deinked pulp from mixed office waste by high temperature pero-ble ching. P. Lunabba, T. Grandfeldt, P. Grundstrom, E. Lary. (T333) 10:36.

CAD for Windows, N. McCubbin, 8:87,

CAMERAS. Continuous paper machine monitoring - the key to reducing breaks. K.K. Hilden et al. (T183) 6:49.

CAPITAL EXPENDITURES. Upgrading and expanding production is still industry focus. I. Bailey, 6:21.

CEO INTERVIEW. Doing their homework well pays off for Alliance Forest Products' ders. G. Rodden. 10:16.

CHALLENGING market pulp conditions sets stage for more industry consolidation. P.

CHARACTERIZING polycyclic aromatic hydrocarbon emissions from hog fuel boilers. C. Luthe et al. (T423) 12:118.

CHELATING AGENTS. Determining of chelating agents (EDTA and DTPA) in bleach liquors, J. Virtapohja. (T330) 10:33.

CHEMICAL REPORT. Look for balance in chemical commodity markets in 1998. J. Pic-

CHEMICALS. Time to rebuild with paper chemistry? I. Kirkpatrick et al. 1:12.

CHLORINE FREE BLEACHING. Progress report on the BFR TM technology demonstration: December 1996, S.C. Stratton et al. (T82) 3:45.
CHLORINE FREE BLEACHING, Use of high temperature resistant chelants in peroxide

eaching of kraft pulps. T. Jaschinski et al. (T261, 8:52.

CLOSED SYSTEMS. A preliminary evaluation of the use of treated mill effluent in hydrosulphite and peroxide bleaching of TMP. D.F. Wong et al. (T400) 11:57. CLOSED SYSTEMS. Engineering assessment of system cle

grated newsprint mill. D.W. Francis et al. (T437) 12:134. CLOSURE and corrosion don't need to be partners. G. Rodden. 5:17.

CLOTHING. Papermakers should not neglect the dryer section. G. Rodden. 2:12. COATED PAPERS. Manufacture of No. 5 lightweight coated using on-line film proting and soft nip calendering - Experience from MacMillan Bloedel PM5. R.G.

McCaig et al (T289) 9:81. COATING can prevent overdrying edges. G. Rodden, 3:35.

COATING. Complete shear rate analysis provides a new means of optimizing coating performance on high speed coaters, K.K. Hilden et al. (T266) 8:57. Film applicators - the past, the present, the future. A. Braaten et al. (T345) 10:48.

COATING DRYING. Non-contacting infrared drying - choice of technology. H. Peltoniemi et al. (T466) 12:163.

COLLOIDAL stability of flexographic newsprint deinking dispersions. E.O. Fernandez et al. (T383) 11:39.

COMMERCIAL SCALE linting evaluation under controlled conditions. P&PC. 9:21. COMMODITY prices caught in Asian downdraft. P. Mohr. 2:8.

COMMODITIES, currencies and deflation - U.S. dollar strength restrains commodity prices, P. Mohr. 10:8.

COMPARISON of mid-ranging controllers. B.J. Allison et al. (T25) 1:61.

COMPARISON between low-speed kneader and high-speed disperser: effect of temperature, energy consumption and chemistry on optical properties. B. Carré, et al. (310) 9:46.

COMPETITIVE CHALLENGES in market pulp. P. Mohr. 4:10.

COMPLETE shear rate analysis provides a new means of optimizing coating perfornce on high speed coaters. K.K. Hilden et al. (T266) 8:57. COMPUTERS. The Millennium Bug. P.J. Greenbaum. 9:24.

CONFERENCES:

TS Annual Meeting, 3:18.

Environmental Conference, J. Bailey, 6:17.

Estivale Conference, J. Outlet. 7:12 PacWest Conference, G. Rodden, 7:17.

Biotechnology, J. Bailey, 10:9.

Corrosion. G. Rodden, J. Bailey. 12:12. CONFERENCES, courses and seminars can keep your skills up to par. J. Bailey. 1:86, CONSTRAINED multivariable control of a wood chip refiner. H. Du et al. (T257) 8:47.

CONTINUOUS paper machine monitoring - the key to reducing breaks. K.K. Hilden et al. (T183) 6:49.

CONTRACT railcar switching: A possible mill option. P&PC Special Report. 5:13. CONTROL of biological effluent treatment for mechanical pulp mills. G. Sedgwick et al.

CONTROL of foaming at the size press. S.M. Vines et al. (T242) 7:68,

CONTROLLING filler retention in mechanical grades. T. Tomney et al. (1274) 8:66, CORROSION. Closure and corrosion don't need to be partners. G. Rodden. 5:17.

CORROSION. Studies on the corrosion of Fe-based alloys for superheater applications. K. Salmenoja et al. (T430) 12:126.

CPPA oxygen delignification survey, D.W. Reid et al. (T387) 11:43.

D

DECONCENTRATION treatment for corrugating medium papermaking circuits: target zero reject. S. Nivelon et al. (T371) 11:28.

DEINKING. Measurement of deinked pulp quality and deinking efficiency, Part I: Impact of specimen preparation procedures on ISO brightness results. M. Lévesque et al. (T141) 5:27

Part II: Impact of specimen preparation procedures on ink content results. M. Lév et al. (T211) 6:79.

DEINKING. Comparison between low-speed kneader and high-speed disperser: effect of temperature, energy consumption and chemistry on optical properties. B. Carré et al. (T310) 9:46, DEINKING. Recycled pulp washing.

selection for a single-loop ONP/OMG deinking plant. D. Tse, et al. (T337) 10:40.

DEINKING. Colloidal stability of flexographic newsprint deinking dispersions. E.O. Fernandez et al. (T383) 11:39.
DEINKED STOCK, Ouality aspects of 100% deinked newsprint furnish, A. Astrom, I.

DEINKED STOCK. Microbiological decontamination of recycled papers and boards. J.Y. Escabasse et al. (T412) 12:106.

DEREGULATION will help the industry. A. Lampert. 3:30.

DESIGN REVIEW of demineralized water plants for industrial power generation. D. McCann. (T176) 6:37. DESIGN REVIEW of electrostatic precipitators for biomass power boilers. D. McCann.

(T306) 9:42. DETERMINING of chelating agents (EDTA and DTPA) in bleach liquors. J. Virtapohja. (T330) 10-33

DEVELOPMENT of structural fibre properties in high intensity refining. K-A. Kure et al.

DEVELOPMENT of an effective TRS and odor reduction program. R. Urbanski et al.

DEVELOPMENT of an expert monitoring and advisory system for preventing pulp sheet breaks, LS, Li et al. (T378) 11:35.

DIAL M for MagniPress. G. Rodden. 8:44

DID the quite brown fox really jump over Toledo?, N. McCubbin. 12:175. DIGESTERS. The smart people at Norkraft - open to innovations. J.H. Bethune. 12:29

DIOXINS. Sulphur addition to control dioxins formation in salt-laden power boilers. C. Luthe, et al. (T391) 11:48.

DOING their homework well pass off for Alliance Forest Products' founders. G. Rodden. 10:16. DOLBEAU's PM5. PM5 puts Dolbeau in an "eminent" position. G. Rodden. 10:20. DON'T let corrosion eat away your profits. G. Rodden, et al. 12:12.

DRAINAGE. Sheet forming studies using layered orientation analysis. A.-L. Erkkilä et al. (T39) 1:81.

ECOLOGY. Implementation and benefits of environmental awareness training. M. Owen et al. (T106) 4:43.

ECONOMIC EVALUATION of black liquor treatment processes for incremental kraft pulp production, M.F. Davy et al. (T51) 2:35. ECONOMICS. How shareholder value is reshaping the industry. D. Mili. 6:14.

EDUCATION. University of Toronto students have learned their lessons well. G. Rodden. 6:11

EDUCATION. What price education? J.H. Bethune. 12:33.

EFFECT of paper machine forming and pressing on offset linting. J.R. Wood et al. (T350) 10:53. EFFECT of Condebelt press drying on sheet structure and properties. E. Retulainen et al.

(T20) 1:53. EFFECT of Water Jet conditioning on low freeness pulp at the Rauma paper mill. A. Puu-

runen. (T180) 6:42. EFFLUENT FREE MILLS. Deconcentration treatment for corrugating medium papernaking circuits: target zero reject. S. Nivelon et al. (T371) 11:28

EFFLUENT TREATMENT. Étude comparative de l'opération d'un système de bioreac-teur à membranes et d'un système de boues activées conventionnel pour le traiteent des effluents p

ment des effluents papetiers. R. Dufresne et al. (T66) 2:51.

EFFLUENT TREATMENT. ITT Flygt agitators help Abitibi-Consolidated's Beaupré mill meet effluent regulations. W.D. Short. (T97) 3:61.

EFFLUENTS. Progress in reducing effluent acute lethal toxicity: A 1996 survey. B. O'Connor et al. (T471) 12:168.

ELECTRICITY. Electricity deregulation - managing a new reality: a western perspective. L. Hessen, (T433) 12:130.

ELEVEN MILLS record no lost time injuries. L. Marcil. 4:47.

EMISSIONS, Field trials and emissions testing of paper deinking solids (PDS), M.A. Dou-glas et al. (T323) 10:25. EMISSIONS. Characterizing polycylic aromatic hydrocarbon emissions from hog fuel

boilers. C. Luthe et al. (T423) 12:118. ENERGY. "Whole room" control puts a new high-tech face on A-C's groundwood opera-

tions. M. Williamson. 4:13.

ENERGY. Post refiners give Bowater Mersey an energy edge. G. Rodden, 9:9. ENGINEERING assessment of system closure options for an older integrated newsprint

mill. (T437) 12:134. ENHANCING deinked pulp quality through low consistency refining. R.S. Fletcher et al.

ENVIRONMENTAL labelling and profiling, P. Riebel. 1:92.

ENVIRONMENTAL management systems in Canada's pulp and paper industry: A survey and analysis of current practice. P.M. Zerne et al. (T206) 6:74. ENVIRONMENT. Alberta Pacific's environmental program leaves nothing to chance. P.

ENVIRONMENT. Environmental management systems in Canada's pulp and p

industry: A survey and analysis of current practice. P.M. Zerbe et al. (T206) 6:74. THE EPA Cluster Rule: What are the implications for Canadian mills? K. Vice. (T455) 19:159

ESTIVALE discusses crucial industry issues. J. Ouellet. 7:12.

ÉTUDE COMPARATIVE de l'opération d'un système de bioréacteur a membranes et d'un système de boues activées conventionnel pour le traitement des effluents apetiers. R. Dufresne et al. (T66) 2:51.

EVALUATING paper machine operation - I. Equipment and operation - (a) Principles. J. Mardon et al. (T149) 5:35. (b) Lost Efficiency Analysis. J. Mardon et al. (T157) 5:43. (c) Key information. J. Mardon et al. (T161) 5:47.

EVALUATION of ammonium polyphosphate and waste-activated sludge extract as a nutrient source for activated sludge system. D. Frigon et al. (T294) 9:29.

EVALUATION of high velocity impingement hoods applied to conventional drying cylinders. L. Lang et al. (T416) 12:110. EXPERIMENTAL DESIGN. Improvement of modeling D-Optimal design data with

neural networks. R. Lanouette et al. (T298) 9:34.

EXPERT SYSTEMS. Control of biological effluent treatment for mechanical pulp mills. gwick et al. (T29) 1:69.

EXPERT SYSTEMS. Development of an expert monitoring and advisory system for pre-

venting pulp sheet breaks. I.S. Li, et al. (T378) 11:35.

EXTENDED CALENDAR. Conferences, courses and seminars can keep your skills up to par. J. Bailey, 1:86

FIELD trials and emissions testing of paper deinking solids. M.A. Douglas et al. (T323) 10:25. FILM APPLICATORS - the past, the present, the future. A. Braaten et al. (T345) 10:48. FINE PAPERS. Pitch deposition in a fine paper mill. L. Raymond et al. (T71) 2:56.

FIGHTING water-induced bearing failure. S. Eliot. 7:29.
FLUIDIZED BEDS. Field trials and emissions testing of paper deinking solids (PDS).

M.A. Douglas, et al. (T323) 10:25.

FOR COURIERS the internet delivers. N. McCubbin. 7:86. FORMATION. Machine direction profiles of stock speed and table activity. R.R. Farnood

et al. (T130) 4:71.
FORMING SECTIONS. Improved newsprint operation with a Bel Baie IV, G.M. Welcher.

FIBRE OPTICS. What superintendents and engineers need to know about fibre optics. E.I. Byres. (T270) 8:62. FILLERS. Controlling filler retention in mechanical grades. T. Tomney et al. (T274) 8:66,

G

GADGET COMPETITION. Western mills strut their stuff in Gadget Competition. 3:28. GAS GENERATORS. Reduction of chlorine dioxide emissions from a Mathieson generator. R. Shaw. (T89) 3:52.

GRANITE ROLL substitutes popular, survey shows. P.N. Williamson. 3:30

GROUNDWOOD. Effect of Water Jet conditioning on low freeness pulp at the Rauma paper mill. A. Puurunen. (T180) 6:42.

HARMAC PACIFIC gets 'cracking'. G. Rodden, 11:12.
HEADBOXES, SymFlo D: the newest dilution control headbox on the market. P. Nyberg. et al. (T5) 1:32.

HEAT IS ON. J. Bailey. 6:17.
HIGH DENSITY fast-response (HDF) gas infrared drying: a new level of drying performance. M.R. Ricks. (T197) 6:64.

HOW to use effluent while bleaching. G. Rodden, 3:37. HOW to prepare for apron lip repair. P&PC. 4:16.

HOW SHAREHOLDER value is reshaping the industry. D. Mili. 6:14. HOWARD RAPSON pioneered chlorine dioxide bleaching. M. Wayman. 4:22.

IDEAL SLUDGE management method hard to pinpoint. N. Ishak. 3:36.

IMPINGEMENT DRYING, Evaluation of high velocity impingem conventional drying cylinders. L. Lang et al. (T416) 12:110. ent hoods applied to

IMPLEMENTATION and benefits of environmental awareness training. M. Owen et al. (T106) 4:43.

IMPORTANCE of washing in oxygen delignification and TCF bleaching. S. Andtbacka.

IMPROVED newsprint operation with a Bel Baie IV. G.M. Welcher. (T193) 6:60. IMPROVED transition metal removal in a reducing agent-assisted chelation stage: a labo-

study. Y. Ni et al. (T285) 8:77. IMPROVEMENT of modeling D-Optimal design data with neural networks. R. Lanouette et al. (T298) 9:34.

INCIDENCE of the destabilization of the pulp suspension on the deposition of secondary stickies. B. Carré, et al. (T248) 7:75.

INDUSTRY's holy grail: the search for fibre, P.J. Greenbaum. 3:32.

INFLUENCE of fibre morphology and chemical composition on the papermaking potential of kenaf fibres. H. Pande et al. (T374) 11:31.

INFORMATION TECHNOLOGY. Integrated info challenges, B. Dalton, 12:25.

INPUT/OUTPUT. Who needs E-mail? N. McCubbin 1:90. Plan your trip using a CD-ROM, N. McCubbin. 2:61. Some tips for the web. N. McCubbin. 3:67. Brazilian mills have a lot to offer. N. McCubbin. 4:76. Keeping track may depend on your outlook. N. McCubbin. 5:63. Microsoft: the good and the annoying. N. McCubbin. 6:87. For couriers, the internet delivers. N. McCubbin, 7:86. CAD for Windows. N. McCubbin. 8:87. 15 years in desktop publishing. N. McCubbin. 9:62. Inoculate your computer, N. McCubbin. 10:73. Which word processing package? N. McCubbin. 11:63. Did the quite brown fox really jump over Toledo? N. McCubbin. 12:175 INTEGRATED information systems model creates new challenges. B. Dalton. 12:25.

INTEGRATED TOOL for intelligent identification of CD process alignment, shrinkage and dynamics. M. Heaven et al. (T56) 2:40.

INVESTIGATIONs on mechanism and on kinetics of xylanase prebleaching. T. Gliese et al. (T474) 12:171.

FLYGT agitators help Abitibi-Consolidated's Beaupré mill meet effluent regulati W.D. Short, (T97) 3:61.

JASPER MARDON led the way in paper machine analysis and troubleshooting. O. Forgacs. 4:26

KEEPING TRACK may depend on your outlook. N. McCubbin. 5:63.

KRAFT MILLS. Survey of bleach plant washing practices in Canadian mills. M. Towers et al. (T218) 7:44.

LANDFILL. Site location and open communications are the keys to a successful landfill permitting. F. Villeneuve et al. (T47) 2:29.

LATEST experiences of on-line charge measurement: a process control concept. L. Bley,

LIFE CYCLES, Environmental labelling and profiling. P. Riebel. 1:92. Mill-wide environmental awareness training. P. Riebel. 3:65. Nutrients in mill effluents: An update. P. Riebel. 5:9. Water quality-based regulations are on the way. P. Riebel. 7:85. Working with environmental consultants. P. Riebel. 9:64. Environmental performance and shareholder value, P. Riebel, 11:61.

LINTING. The effect of paper machine forming and pressing on offset linting. J.R.

Wood, J.D. McDonald, P. Ferry, C.B. Short. (T350) 10:53. LOOK for balance in chemical commodity markets in 1998. J. Piccione. 1:21.

MACHINE DIRECTION profiles of stock speed and table activity. R.R. Farnood et al.

MACHINE DESIGN. A new mini-mill for high quality recycled linerboard. J. Parisian et

MAIN CONCEPT for pulp sheet formers based on the twin-wire press principle. M. Rosker et al. (T126) 4:67.

MAINTENANCE. How to prepare for apron lip repair. P&PC. 4:16

MAINTENANCE. Fighting water-induced bearing failure. S. Eliot. 7:29 MAINTENANCE. System monitors reliability. M. Wiseman et al. 7:32.

MANUFACTURE of No. 5 lightweight coated using on-line film p nip calendering - Experience from MacMillan Bloedel PM5. R.G. McCaig et al. (T289) 8:81.

MANAGING paper test data for quality control. G. Sisler et al. (T367) 11:24.

MEASUREMENT of deinked pulp quality and deinking efficiency, Part I: Impact of specimen preparation procedures on ISO brightness results. M. Lévesque et al. (T141) 5:2 Part II: Impact of specimen preparation procedures on ink content results. M. Léves

MECHANICAL PULPING. 23rd Annual Leask Survey: The mechanical pulping market ature, A.I. Barnet, 3:12,

MECHANICAL PULPING. The potential use of larch in the Canadian pulp and paper industry: A review. J.L. Valade. (T459) 12:156.

METAMORPHOSIS: How Donohue Thorold switched to an 80% recycled furnish. G. Rodden, 3:8, MICROBIOLOGICAL decontamination of recycled papers and boards. J.Y. Escabasse et

MICROSOFT: the good and the annoying. N. McCubbin. 6:87. MILLENNIUM BUG. P.J. Greenbaum. 9:24.

MILL-WIDE environmental awareness training. P. Riebel. 3:65.

MILLS still have a long wish list of testing equipment needs. J. Bailey. 10:22. MINIMAL impact bleached kraft pulp mill. P. Axegard et al. (T134) 4:81.

MIXED OFFICE WASTES. Aspects of the agglomeration properties in wastepaper. R.A. Venditti et al. (T319) 9:56.
MODERNIZATION. Avenor Thunder Bay is Canada's newer st millionaire. G. Rodden. 2:18.

MODERNIZATION. Metamorphosis: How Donohue Thorold switched to an 80% recycled furnish. G. Rodden. 3:8

MODERNIZATION. PM5 puts Dolbeau in an "eminent position". G. Rodden. 10:20. MODIFIED zeolite in waste paper recycling, M.M. Sain et al. (T238) 7:64.

MOISTURE CONTENT. Steam drying: benefits, technology and a survey of applications.

D. Bruce et al. (T420) 12:115.

MULTI-PLY coated board machine optimized for final product quality. E. Altosaar et al.

NAKED TRUTH on hot peroxide bleaching. H.U. Suss et al. (T122) 4:63.

NARROWING the focus helps mills provide a safer work environment. G. Rodden, 8:11, NEW MINI-MILL for high quality recycled linerboard. J. Parisian et al. (T282) 8:74,

NEWSPRINT. Seasonal variations at a mechanical newsprint mill. B.J. Fuhr et al. (T61) 2:45. NEWSPRINT. Colloidal stability of flexographic newsprint deinking disperns. E.O. Fernandez et al. (T383) 11:39

NEW TECHNOLOGY brings new risks. K. McNeil. 3:35. NON-CONTACTING infrared drying - choice of technology. H. Peltoniemi et al. (T466) 19:163

NONIDEAL VALVES in control: tuning of loops and selection of valves. J. Piipponen.

NONWOOD FIBRES. Pulping of Canadian industrial hemp (Cannabis sativa L.) F. Correia et al. (T303) 9:39. NONWOOD FIBRES. Influence of fibre morphology and chemical compo

papermaking potential of kenaf fibres. H. Pande et al. (T374) 11:31 NONWOOD FIBRES. Wheat straw: available source for Canada? P.A. Watso

(T449) 12:146. NUTRIENTS in mill effluents: An update, P. Riebel, 5:9.

NUTRIENTS. Evaluation of amr TRIENTS. Evaluation of ammonium polyphosphate and waste-activated sludge extract as a nutrient source for activated sludge system. D. Frigon et al. (T294) 9:29.

OBITUARY. Howard Rapson pioneered chlorine dioxide bleaching. M. Wayman. 4:22. OBITUARY. Jasper Mardon led the way in paper machine analysis and troubleshooting. O. Forga cs. 4:26.

ODOR CONTROL. Development of an effective TRS and odor reduction program. R. Urbanski et al. (T278) 8:70.

ON-LINE chip size analysis - new technology for an improved pulping process. T. Bergman. (T453) 12:150.

ONE FILTER for continuous and clean wet end liquids. J.C. Walter. (T228) 7:54. OXYGEN. The importance of washing in oxygen delignification and TCF bleaching. S. Andtbacka. (T93) 3:57.

OXYGEN DELIGNIFICATION. CPPA oxygen delignification survey. D.W. Reid et al. (T387) 11:43.

ACWEST delegates get the straight talk from industry leaders. G. Rodden. 7:17, PAPER DEINKING SOLIDS (PDS). Field trials and emissions testing of PDS. The combustor produces minimum emissions when firing PDS under optimized conditions.

M.A. Douglas, F.D. Friedrich, R. Mortazavi, V. Razbin. 10:25.
PAPER INDUSTRY re-positions for the new millennium. P. Mohr. 8:8.

PAPER MACHINE FORMING. The effect of paper machine forming and pressing on offset linting. J.R. Wood et al. (T349) 10:53.

# ANNUAL INDEX

PAPER MACHINES. Pressing and drying developments. R. Talja. (T113) 4:54.

PAPER MACHINES. Evaluating paper machine operation - 1. Equipment and operation - (a) Principles. J. Mardon et al. (T149) 5:35. (b) Lost Efficiency Analysis. J. Mardon et al. (T157) 5:43. (c) Key information. J. Mardon et al. (T161) 5:47.

PAPER MACHINES. High speed newsprint from 100% recycled at PM14, Aylo Procter et al. (T404) 12:98.

PAPERMAKERS should not neglect the dryer section. G. Rodden. 2:12.

PAPER PROPERTIES. Integrated tool for intelligent identification of CD process alignment, shrinkage and dynamics. M. Heaven et al. (T56) 2:40.

PAPER PROPERTIES that influence ink-jet printing, D.F. Varnell. 4:37.

PAPER QUALITY improvements on conventional calenders by hot calendering with tandem Calcoils, S.M. Zakaib et al. (T170) 5:57,

PAPER QUALITY controls by utilizing new consistency measurement capabilities. M.S. Laurikkala et al. (T224) 7:50.

PAPERWEEK overcomes the obstacles. G. Rodden. 3:17.

PAPERWEEK changes with the times. G. Rodden. 11:8.
PERFORMANCE EVALUATION. Comparison of mid-ranging controllers. B.J. Allison et

PID controller tuning based on finite frequency response data. K. Natarajan et al. (F118) 4:59. PINCH ANALYSIS. Project design in energy efficiency using pinch analysis. G. Noël et al.

PITCH DEPOSITION in a fine paper mill. L. Raymond et al. (T71) 2:56, PLAN your trip using a CD-ROM. N. McCubbin. 2:61, PM5 puts Dolbeau in an "eminent" position. G. Rodden. 10:20.

POLLUTION CONTROL. The EPA Cluster Rule: What are the implications for Canadian Mills? K. Vice. (T455) 12:152.

POPE & TALBOT wants to be a market pulp leader. G. Rodden. 11:9

POST REFINERS give Bowater Mersey an energy edge, G. Rodden, 9:9.
THE POTENTIAL use of larch in the Canadian pulp and paper industry: A review, (T459) 12:156

POWER GENERATION. Design review of demineralized water plants for industrial power generation. D. McCann. (T176) 6:37.

PRECIPITATION COSTS. Economic evaluation of black liquor treatment processes for incremental kraft pulp production. M.F. Davy et al. (T51) 2:35. A PRELIMINARY evaluation of the use of treated mill effluent in hydrosulphite and per-

oxide bleaching of TMP, D.F. Wong et al. (T400) 11:57.

PRESS. Effect of Condebelt press drying on sheet structure and properties. E. Retulainen et al. (T20) 1:53.

PRESSING and drying developments. R. Talja. (T113) 4:54.

PRESSURIZED REFINING. Development of structural fibre properties in high intensity refining, K-A. Kure et al. (T233) 7:59.

PRINTING. Understanding your customers' customers' requirements. R. Danby. 9:13. PRINTING. Commercial scale linting evaluation under controlled conditions. P&PC, 9:21.

PRINT QUALITY. Paper properties that influence ink-jet printing. D.F. Varnell. 4:37. PROCESS CONTROL, Latest experiences of on-line charge measurement: a protrol concept. L. Bley. (T165) 5:51.

PROCESS CONTROL. Multi-ply coated board machine optimized for final product quality. E. Altosaar et al. (T202) 6:70.

PROCESS CONTROL. Nonideal valves in control: tuning of loops and selection of valves. J. Plipponen. (T361) 10:64.

PROGRESS in reducing effluent acute lethal toxicity: A 1996 survey. B. O'Connor et al.

PROGRESS REPORT on the BFR<sup>TM</sup> technology demonstration; December 1996, S.C. Stratton et al. (T82) 3:45,

PROJECT energy efficiency using Pinch analysis. G. Noel et al. (T409) 12:103. PULP PROPERTIES. Enhancing deinked pulp quality through low consistency refining.

R.S. Fletcher et al. (T44) 2:26. PULP PROPERTIES. Raffinage à basse consistance de la pâte thermomécanique. R. mard. (T85) 3:48.

PULPING of Canadian industrial hemp (Canadbis sativa L.). F, Correia et al. (T303) 9:39.

QUALITY aspects of 100% deinked furnish. A. Astrom et al. 10:60. QUALITY CONTROL. Managing paper test data for quality control. G. Sisler et al.

QUALITY CONTROL. On-line chip analysis - new technology for an improved pulping process. T. Bergman (T453) 12:150.

R

RAFFINAGE à baste consistance de la pâte thermomécanique. R. Simard. (T85) 3:48, REACTION TIME. Brightness and bleachability of thermomechanical pulp. E.C. Xu

RECOVERY BOILERS. Software based syst em provides improved leak detection capabilv for recovery boilers. G. Knowles. (T463) 12:160,

RECYCLED pulp washing, Part II: Optimum washing sub-system selection for a singleloop ONP/OMG deinking plant, D. Tse et al. (T337) 10:40.
REDUCTION of chlorine dioxide emissions from a Mathieson generator, R. Shaw. (T89) 3:52.

REFINER autotransformer motor start. J. Stout et al. (T188) 6:54.

REJECT thickening behavior of TMP screening, R.F. Wakelin et al. (T1) 1:27.
RESEARCH AND DEVELOPMENT. Status of forest sector research and development in

Canada, C.S. Binkley et al. (T10) 1:39, RESPONSE TIME. PID controller tuning based on finite frequency responses

RETENTION. The naked truth on hot peroxide bleaching. H.U. Suss. (T122) 4:63.
ROLL COVERS. Suppliers must remain responsive to mills' changing needs. G. Rodden.

RUNNABILITY, Paper quality improvements on conventional calenders by hot calendering with tandem Calcoils. S.M. Zakaib et al. (T170) 5:57.

SCA+ opens a window of opportunity for Stora Port Hawkesbury, G. Rodden, 8:16. SAFEST MILL IN CANADA. Eleven mills record no lost time injuries. L. Marcil. 4:47. SAFETY. Narrowing the focus helps mills provide a safer work environment. G. Rodden. 8:11.

SEASONAL variations at a mechanical newsprint mill. B.J. Fuhr et al. (T61) 2:45,

SCREENING. Reject thickening behavior of TMP screening. R.F. Wakelin et al. (1) 1:27.

SECRET to high-quality paper starts with fibre, P.N. Williamson, 3:36, SHEDDING some light on women in the industry, P.J. Greenbaum, 1:17.

SHEET forming studies using layered orientation analysis. A.-L. Erkkilä et al. (T39) 1:81. SHEETS. The main concept for pulp sheet formers based on the twin-wire press princi-ple. M. Rosker et al. (T126) 4:67.

SITE LOCATION and open communicati ons are the keys to a successful landfill pern ting, F. Villeneuve et al. (T47) 2:29.

SIZE PRESSES. Control of foaming at the size press. S.M. Vines et al. (T242) 7:68.

SLUDGE PLANT. Accelerated degradation of EDTA in an activated sludge plant. J. Virtapohja et al. (T396) 11:53.

SODIUM/sulphur/chlorine balance demonstrated low liquor losses at a kraft mill. B. Blackwell et al. (T34) 1:74. SOFTWARE based system provides improved leak detection capability for recovery boil-

ers. G. Knowles et al. (T463) 12:160,

SOLJD RESIDUES generation and management at Canadian pulp and paper mills in 1994 and 1995, I.D. Reid. (T109) 4:49.

SOME TIPS for the web. N. McCubbin. 3:67.

STATUS of forest sector research and development in Canada. C.S. Binkley et al. (T10) 1:39, STEAM drying: benefits, technology and a survey of applications. D. Bruce et al. (T420)

STOCK PREPARATION. Paper quality controls by utilizing new consistency m ment capabilities. M.S. Laurikkala et al. (T224) 7:50.

STORA START-UP, SCA+ opens a window of opportunity for Stora Port Hawkesbury, G. Rodden, 8:16, Dial M for MagniPress, G. Rodden, 8:44.

STUDIES on the corrosion of Fe-based alloys for superheater applications. K. Salmenoja et al. (T430) 12:126.

SULPHUR addition to control dioxins formation in salt-laden power boilers. C. Luthe et al. (T391) 11:48.

SUPPLIERS must remain responsive to mills' changing needs, G. Rodden. 11:17 SURVEY of bleach plant washing practices in Canadian mills. M. Towers et al. (218) 7:44. SURVEYS. CPPA oxygen delignification survey. D.W. Reid et al. (T387) 11:43.

SURVEYS. Progress in reducing effluent acute lethal toxicity: A 1996 survey. B. O'Con ner et al. (T471) 12:168.

SYMFLO D: the newest dilution control headbox on the market. P. Nyberg et al. (T5) 1:32. SYSTEM MONITORS reliability. M. Murray et al. 7:32.

TAKEOVERS. Pope and Talbot wants to be a market pulp leader. G. Rodden. 11:9. TECHNICAL SECTION's 83rd Year in Review. 3:18.

TECHNOLOGY. High density fast-response (HDF) gas infrared drying: a new level of drying performance. M.R. Ricks. (T197) 6:64.

TESTING EQUIPMENT. Mills still have a long wish list of testing equipment needs. J. Bailey 10-99

TEST METHODS. The incidence of the destabilization of the pulp suspension on the n of secondary stickies. B. Carré, et al. (T248) 7:75

TIME TO REBUILD with paper chemistry? I. Kirkpatrick et al. 1:12. THE EPA cluster rule: What are the implications for Canadian mills? K. Vice. (T455)

THE smart people at Norkraft - open to innovations. 12:29.
TOP quality deinked pulp from mixed office waste by high temperature peroxide bleaching. P. Lunabba et al. (T333) 10:36.

TRANSITION METALS. Improved transition metal removal in a reducing agent-assisted chelation stage: a laboratory study. Y. 33 et al (T285) 8:77.

TRANSPORTATION. Contract railcar switching: A possible mill option. P&PC Special Report. 5:13.

UNDERSTANDING your customers' customers' requirements. R. Danby. 9:13.
UNIVERSITY of Toronto students have learned their lessons well. G. Rodden. 6:11. UPGRADING and expanding production is still industry focus. J. Bailey. 6:21. USE of high temperature resistar Jaschinski et al. (T261) 8:52. ant chelants in peroxide bleaching of kraft pulps. T.

USING NATURE to control toxicity. J. Ouellet. 3:33,

WASTES. Solid residues generation and management at Canadian pulp and paper mills in 1994 and 1995, LD. Reid. (T109) 4:49.

WASTE PAPERS. The modified zeolite in waste paper recycling. M.M. Sain et al. (T238) 7:64

WATER toop and bleaching process design to recycle recovered paper into printing and writing. V. Gehr et al. (T444) 12:141.

WATER MANAGEMENT, Water reduction strategies for existing bleach plants. O. Syberg et al. (T253) 7:80,

WATER quality-based regulations are on the way. P. Riebel. 7:85.

WATER reduction strategies for existing bleach plants. O. Syberg et al. (T253) 7:80. WESTERN MILLS strut their stuff in Gadget Competition. 3:28. WET END. One filter for continuous and clean wet end liquids. J.C. Walter. (T228) 7:54.

WHAT price education? J.H. Bethune. 12:33.

WHAT superintendents and engineers need to know about fibre optics. E.J. Byres. (T270) 8:62.

WHEAT straw: available source for Canada? P.A. Watson et al. (T449) 12:146. WHO needs E-mail? N. McCubbin. 1:90.

"WHOLE ROOM" control puts a new high-tech face on A-C's groundwood operations

WOOD HANDLING. Harmac Pacific gets 'cracking'. G. Rodden. 11:12. WOMEN IN FORESTRY. Shedding some light on women in the industry, P.J. Greenbaum, 1:17.

WORKING with environmental consultants. P. Riebel. 9:64.

YEAR IN REVIEW. The Technical Section's 83rd Year in Review. 3:18.

